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A MUNICIPAL POWER PLANT

IN A CITY PARK

BY

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THESIS

For the Degree of Bachelor of Science
in Architecture

COLLEGE OF ENGINEERING
UNIVERSITY OF ILLINOIS

PRESENTED, JUNE, 1906

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Edgar Albert Stanley

ENTITLED A Municipal Power Plant

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OF Bachelor of Science in Architecture

N. Clifford Ricker.

HEAD OF DEPARTMENT OF Architecture

1906
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A Municipal Power Plant.

Government ownership of public utilities is a much discussed principle at the present time. It is met with in a great variety of guises, in all degrees of national, state, and municipal application. As yet it is in operation in only a comparatively small way, a principle having more life in popular discussion than demonstration in actual use. This popular discussion is centered most on municipal ownership as being the first step and one in which the people have a close and personal interest. More than mere reference to the principle is uncalled for. Our starting point is the assumption that it is an ultimate and all inclusive fact in actual practice in a modern utopia. It is further assumed that, for effectual organization and control, the operation of these publicly owned utilities is grouped in departments, and that of these departments the one with which we are particularly

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concerned is that incident to public utilities requiring steam power. Taking the principal ones, these are water supply, electric lighting and traction.

Our utopia is a city of 100,000 population, situated on the [illegible] of one of the Great Lakes. [illegible] the city; the city park system [illegible] of the splendid features of the lines of this system is the lake [illegible] the city, and bordering the lake for six [illegible] having a fine outlook [illegible] bay. It was decided that the new municipal power plant could be placed on this portion of the park to the great advantage of the splendid feature, and to the [illegible] purposes of the plant, a plan that would make for their harmony with the city [illegible].

A [illegible] the railroad crosses the park and the [illegible] — called on a high [illegible] open subway and tunnel under the park roadways. There are [illegible] for the [illegible] at the top of the [illegible] and beside the railroad, the same [illegible] for the [illegible] roadway and [illegible].

needed for the modern vertical pumping engines,
is such that the ground level is at the proper
level of the pump house. By continuing this
ground level around in a terrace to the roof

the electrical power house respectively, the office building of the plant, and the library building in which are reading and social rooms for employees, likewise join the central planking the boiler house on either side.

There are storage yards on either side of the boiler house and joining it, and one tunnel, to which lead service roads following along either side of the central ambulance from the site. These service roads are also used for the purpose of [illegible]. As it is desired that this area shall be kept free from [illegible] the plant, and because of the restricted size of the [illegible] is made for [illegible] the terrace.

A small restaurant will be [illegible] a shelter and [illegible] supplies for the [illegible] on the building and [illegible] the [illegible] power house. [illegible] a small [illegible] and [illegible] space and [illegible] there is a [illegible].

In locating the reservoir and its adjacent
park was taken that no place was on the
approach near enough to the reservoir for it
to be seen [illegible] from it
[illegible] each end of the reservoir
and especially from the [illegible]
[illegible] from the reservoir there is no
view of the water expanse: the slight
[illegible] of the land [illegible]
[illegible] and to the [illegible] and another public park
[illegible] provided [illegible].

The park towers, [illegible] upon to put
[illegible] of the existing approach
[illegible] and provide the visitor in that
direction, of the [illegible] portion of the park.

In a problem of this character the architectural
will be kept [illegible] entirely subservient
to the mechanical necessities. The practice that
architectural and [illegible] engineers would,
most likely, work together: the [illegible]
engineer, in his assigning suitable positions as
to [illegible] the architect in designing an architectural
[illegible] [illegible] [illegible]

the heat be given to [illegible] mechanical
necessities in his design. Data of this sort
required for the different stations could be
supplied by the mechanical engineer.

In this hypothetical case I assume, the
mechanical data supplied is dependable to a
small degree, having a basis in part, but not
arrived at by any exact mathematical
calculations. To gain some insight into
the mechanical problems, water, light, and
traction plants were visited. Since in the
power house of the Union Traction Company,
Indianapolis, are combined, the central
power plant stations, Circle 4, Plan, and the
water, light, and traction plants of Unit, the
measurements were taken for both power
plant space and service floor space, and data
obtained in the form of photographs and tables.
Of our small acquaintance with the insight into
mechanical requirements gained in connection
with the engineer of the plants visited.
Specific data regarding the apparatus of the plant
the following are the most essential: efficiency,
[illegible] steam, etc. [illegible]

procedure., but these deductions are, perhaps, even more of a guess. They are, two thirty million gallon pumps, and two one thousand K. W. electric generators.

The boiler room of the Cleveland plant is the most modern of any visited. Its area per boiler horse power was used in figuring the needed area of boiler room. This plant is equiped with the latest type of vertical pumping engines and from it was obtained the floor space required in the pump house. A duplicate floor space was found to give adequate space for the electrical machines required.

Boiler house ---------- 14,000 sq. ft.
Pump house ---------- 7,500 sq. ft.
and Electrical power house ---- 7,500 sq. ft.

It is believed that in the boiler house ample provision is made for coal handling and storage, by bucket carriers to a "V" section coal bunker under the roof.

The materials of construction are, reinforced concrete for retaining walls and bridges, sand stone for superstructure of buildings, and steel framed roofs, cranes, and other structural parts.

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